

# Installation Manual

## **TruTops products** Part 1: System requirements

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Version 2.53



**Installation manual**

## **TruTops products**

Part 1: System requirements

Edition: **2021-04-27**

Version 2.53  
C332en

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Installation manual  
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# 1. General requirements

**Versions** The system prerequisites described in this document apply to the following TruTops products and versions:

TruTops product	From Version	Minimum version required for update
TruTops (CAD, Nest, Laser, Punch, Tube, Bend)	11.0	TruTops 3.0
TruTops Fab	22.0	10.0
TruTops Monitor	22.0	10.0
WebCalculate	18.0	-
TruTops Cell	8.3	Alle Versionen
TruTops Cell (SW48)	1.0	1.0
TruTops Unfold	5.3	Alle Versionen
TruTops Calculate	16.1	13.0
3-D-Rohrkonstruktion <sup>1</sup>	10.0	Alle Versionen
TruTops Boost	13.0	2.0
TecZone Bend Standalone	18.28.R6	-
TruTops Weld <sup>2</sup>	7.0	7.0
Programming Tube	1.0	1.0

Valid versions

Table 1

**Knowledge** The installation of a TruTops product requires basic knowledge of the operating system and the network structure used.

**User rights** Local administrator rights are required for installation.

**Restart** It may be necessary to restart the computer during installation. Make sure that after restart the same user is logged in as when installation started.

For an installation on a production server, the necessary arrangements need to be made before the server is restarted.

<sup>1</sup> Can only be used together with a full version of TruTops.

<sup>2</sup> See special requirements: 5.13



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**Installation medium** TruTops products are supplied on a DVD-ROM or USB drive as standard and can be installed directly from this.

TruTops Cell (SW48) is downloaded by default via an Online Update Portal. An Internet connection is required for installation and online update. The installation starts after the download is complete.

Optionally, the content can be copied to a local drive or network drive and installed from there.

In the case of a network installation, the following points must be observed:

- The copied data must be accessed via a connected network drive (not via a UNC path).
- If a new network drive is connected to for installation, make sure that, even after performing a restart, the drive retains the same drive letter assigned to it when installation was started.
- The network path must not contain any blanks.



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## 2. Installation environment

**Virus scanner** The use of a virus scanner can lead to a loss in performance during the installation and operation of TruTops products. We therefore recommend to disable the virus scanner during the installation and set it in such a way that live operation of TruTops products is affected as little as possible (specification of exceptions, full scan outside utilization time, etc.).

**Personal fire walls** In order to guarantee trouble-free operation of TruTops products, the processes will need free access via the fire wall settings. More specific information regarding files and processes to be enabled will be displayed during the installation and can also be seen in the installation manual.

**Network** The network must fulfill the following conditions when being operated in PDM mode or when carrying out network database installation:

- Active TCP/IP protocol
- Functional name resolution.
- Transmission rate at least 100 Mbit/s
- Latency < 1ms

If the computer is not being run on the network (e.g. Notebook), the so-called "Microsoft Loopback Adapter" must be installed (see "Installation manual for TruTops, Part 2: Installation and backup of data").

**Dedicated Runtime Environment** We suggest using a system that is reserved only for TRUMPF software products. The installation includes several third-party-products that are required for the correct operation of the TRUMPF software but may interfere with other software products running on the same system.

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## 3. Operating system

### 3.1 General notes

- Server operating system**
- Client applications should not be run on a server operating system.
  - For a client/server operation with more than 4 clients, a server operating system should be installed on the server computer.

**Service packs** All TruTops products are tested with the current service packs of the respective operating systems prior to release (see Table 2, p. 11). If another service pack is published after printing this document, it will promptly be released. Operability cannot be guaranteed until release.

- PDM data storage** The following specifications apply for the data storage of PDM data:
- If possible, the data should be stored on the PDM server PC.
  - The hard drive of the data storage must be formatted in the "NTFS" file system otherwise losses in performance could occur.
  - PDM data cannot be accessed via SAMBA.
  - TruTops Boost and TecZone Bend Standalone doesn't support the PDM mode.

**Use via terminal server** In current versions, TruTops products can be used via Terminal Server.<sup>3</sup>

**Domain controller** It is not possible to install TruTops Server, TruTops Fab Server or TruTops Boost Server on a domain controller.

The installation on a Windows Server 2008 R2 as ReadOnlyDomainController (RODC) is not possible.

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<sup>3</sup> with the exception of TruTops Boost, TruTops Fab, TruTops Monitor, Job Order Interface option and TecZone Bend Standalone

## 3.2 Supported operating systems

### Note

The operability of TruTops products is only guaranteed for the versions, editions and service packs listed below. The installation of TruTops products on non-listed and non-approved systems, as well as the installation of non-approved service packs on existing TruTops installations, is at the user's own risk.

	Windows 8.1 <sup>4</sup>	Windows 10 (1607-1803)	Windows 10 (1809 and up)	Windows Server	
				2016 <sup>Error!</sup> Bookmark not defined.	2019 <sup>Error!</sup> Bookmark not defined.
Edition	Pro Enterprise	Pro Enterprise		Standard Datacenter Foundation	Standard Datacenter Foundation
Bit-Version	64bit	64bit	64bit	64bit	64bit
TruTops Client	X	X	X	X	X
TruTops Server	∅	∅	∅	X	X
TruTops Fab/Monitor Client	X	X	X	∅	∅
TruTops Fab Server	-	O	O	∅	X
TruTops Monitor Server	∅	∅	X	∅	X
WebCalculate	-	-	-	∅	X
TruTops Cell Client	X	X	X	-	-
TruTops Cell Server	X	X	X	-	-
TruTops Cell (SW48)	-	X	X	-	-
TruTops Calculate Client	X	X	X	∅	∅
TruTops Calculate Server	X	X	X	X	X
TruTops Unfold	X	-	-	-	-
Tube Design	-	X	X	-	-
TecZone Bend Standalone	X	X	X	-	-
TruTops Weld	X	X	X	-	-
Programming Tube Client	-	X	X	-	-
Programming Tube Server	-	X	X	X	X

Supported operating systems

Table 2

- Key**
- X = Installation possible and enabled
  - O = Installation possible but not enabled
  - ∅ = Installation possible but not recommended
  - - = Installation not possible

<sup>4</sup> In Windows 8.1 and 10 the EHT converter must be executed with administrator rights when started for the first time.

## TruTops Boost

Operating system (64 bit only)	Service pack	Editions	TruTops Boost Client	TruTops Boost Server
Windows 8.1		Pro / Enterprise	X	O
Windows 10		Pro / Enterprise	X	O
Windows 10 (1809 and up)		Pro / Enterprise	X	X
Windows Server 2012 R2 <sup>5</sup>		Standard / Datacenter / Foundation	∅	∅
Windows Server 2016 <sup>5</sup>		Standard / Datacenter / Foundation	∅	∅
Windows Server 2019 <sup>5</sup>		Standard / Datacenter / Foundation	∅	X

Operating systems supported by TruTops Boost

Table 3

- Legend**
- X = Installation possible and released
  - O = Installation possible but not released
  - ∅ = Installation possible but not recommended
  - - = Installation not possible

<sup>5</sup> The ".NET Framework" server feature must be activated before installation in the server manager. Installation on RODC is not possible.

---

### 3.3 Installation on virtual systems

TruTops products can also be operated in a virtual environment<sup>6</sup> (e.g. VMware Workstation/ESX). However, due to the numerous variants and basic requirements for virtual systems, operability cannot be guaranteed.

**Support** TRUMPF also deals with support requests relating to TruTops products installed in a virtual system environment.

Please note:

- TRUMPF is not obliged to provide solutions for problems arising from the operation in a virtual system environment.
- If problems arise during operation in a virtual system environment, the customer must prove that the problem has **not** arisen due to operation in the virtual system environment.
- The TruBend Cell 7000 machine cannot be programmed in a virtual system environment.
- TruTops Boost Client is not released for operation in a virtual system environment.
- TruTops Cell (SW48) is not approved for operation in a virtual system environment.

**Licensing** Licenses must not be activated on virtual systems.

We recommend instead,

- a) to use a real physical computer as license server
- b) or, if the license server is to be run in a virtual environment, to use the additional "CmDongle" (hardware dongle) which can be ordered from our sales department.

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<sup>6</sup> TecZone Bend Standalone cannot be operated in a virtual environment.



## 4. Database

### 4.1 Microsoft SQL Server

**Compatibility** A version of "Microsoft SQL Server Express Edition" is also installed when the server installation of a TruTops product takes place. Which version

During installation on the server PC, the following points must be observed:

- The Microsoft SQL Server 2005 Express Edition tools cannot be installed parallel to the corresponding Microsoft SQL Server 2008 R2 Express Edition tools. If the Microsoft SQL Server 2005 Express tools are installed on the computer, they have to be uninstalled before installing the Microsoft SQL Server 2008 R2 Express Edition.<sup>7</sup>
- If Microsoft Visual Studio is installed on the computer, it has to at be updated with a specified Service Pack level before the MS SQL Server Express Edition can be installed.<sup>10</sup>

**New instance** The Microsoft SQL Server Express Edition is installed in its own instance. This ensures that existing SQL Server instances are not affected.

If there is already a TRUMPF product installed on the computer which uses the Microsoft SQL Server 2000/2005/2008R2, the corresponding SQL Server instance ("TRUMPF" or TRUMPFSQL1) remains installed and running. It can be turned off or uninstalled at any time as long as it is no longer needed by a product.

Microsoft SQL Server 2008 R2 Express Edition is limited to the use of 1 GB RAM maximum.

If an SQL Server 2008 R2 already exists, it can also be used for TruTops. However, in this case it is also necessary to install a separate TRUMPFSQL1 (or TRUMPFSQL2) instance. For more information please contact TRUMPF CAD/CAM Support.

Installed SQL Server	Microsoft SQL Server 2014 Express Edition with Advanced Services
SQL Instance	TRUMPFSQL2

<sup>7</sup> This is checked before the installation of the Microsoft SQL Server.

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<b>Installed SQL Server</b>	<b>Microsoft SQL Server 2014 Express Edition with Advanced Services</b>
<b>Depended version of Visual Studio</b>	<b>Visual Studio 2010</b>
<b>Special system requirements</b>	<b>64bit</b>
<b>Installed with the following products:</b>	<b>TruTops TruTops Calculation TruTops Cell TruTops Fab TruTops Monitor Server TruTops Boost</b>

Table 4

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## 4.2 Backup of data

### Note

The user alone is responsible for the backup of data, databases, users and the backup of the complete system. When selecting a data backup software, please bear in mind, that it will need to support the data backup of SQL databases (MS SQL Server).

**TruTops Fab Server** The TruTops Fab Server backs up its data in a background service.

**Further information** The installation manual of the TruTops product contains detailed information on backing up data.

TRUMPF also recommends protecting hardware against power failure by using an uninterruptible power supply (UPS).



## 5. Hardware requirements

- TruTops Fab Module Storage** Slightly different requirements apply in the case of TruTops Fab Module Storage (see section 0, p.21).
- TruBend Cell 7000** For using the TruBend Cell 7000, the minimum requirements for processor and memory are specified in “Recommended”.
- TruTops Boost** For TruTops Boost apply special hardware requirements. See section 5.10.

### 5.1 Processor

A powerful processor of the current generation is recommended for all TruTops products, regardless of the operating mode.

	Required	Recommended
<b>Client</b>	Intel® Core™2 Duo (at least 2.8 GHz) or comparable	Intel® Core™ i5 2.6 GHz or comparable
<b>Server</b>	AMD Opteron™/Intel® Xeon®, 2 cores or comparable	AMD Opteron™/Intel® Xeon®, 4 cores or comparable

Processors

Table 5

## 5.2 Internal memory

	Required	Recommended
<b>Client (single application)<sup>8</sup></b>	2 GB RAM <sup>9</sup>	8 GB RAM
<b>Client (multiple applications)<sup>10</sup></b>	2 GB RAM	8 GB RAM
<b>TruTops Server (without client)</b>	4 GB RAM	16 GB RAM
<b>TruTops Fab/Monitor Server (without client)</b>	4 GB RAM	16 GB RAM
<b>TruTops Fab Server + TruTops Server</b>	4 GB RAM	16 GB RAM
<b>TecZone Bend Standalone</b>	4 GB RAM	8 GB RAM

Internal memory

Table 6

### Notes

- Due to a large number of standard services, Windows Vista tends to have a higher memory usage compared with other systems.
- If multiple technology modules are used simultaneously in TruTops, the recommended memory capacity should be used.
- The 32 bit versions of Windows operating systems have an approximate maximum capacity of only 3 GB RAM. However, it is still recommended to use 4 GB RAM in 2 x 2 GB modules, as modern mainboards can use the so-called "dual-channel mode" in such a case. This mode enables considerably faster access times.

## 5.3 Screen

	Required	Recommended
<b>Client</b>	1280x1024	1600 x 1200, 1920x1080 or higher
<b>Server</b>	1280x1024, 1920x1080 or higher	

Screen/Resolution

Table 7

<sup>8</sup> e.g. only TruTops Laser

<sup>9</sup> TruTops Unfold and TruTops Fab Clients can be operated with just 1 GB RAM.

<sup>10</sup> e.g. TruTops Laser + TruTops Punch



## 5.4 Graphics card

**Windows Vista/Open GL** Some TruTops products (see Table 8, p. 20) require hardware-based Open GL support via the graphics card (a software emulation is not sufficient). Especially in Windows Vista, check if the graphics card supports this mode. Compatible chip sets can be found on the SolidWorks website ([www.solidworks.com](http://www.solidworks.com)).

For TruTops, TRUMPF recommends Nvidia graphic cards, also recommended by SolidWorks. ATI/AMD graphic cards are not supported.

### Client PC

	Required	Recommended
<b>TruTops Cell TruTops Bend TruTops Unfold Tube Design</b>	1 GB Open GL, 3D modes, hardware-supported	2 GB Open GL, 3D modes, hardware-supported
<b>TecZone Bend Standalone</b>	Open GL 4.0	Open GL 4.0
<b>Other products</b>	128 MB	1 GB

Graphics card/graphics memory

Table 8

### Server PC

	Required
<b>TruTops Fab/Monitor</b>	Minimum resolution 1280x1024
<b>Other products</b>	No special requirements.

Graphics card

Table 9

---

## 5.5 Special system requirements for TruTops Fab Module Storage

Only the differences of TruTops Fab Module Storage to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- Server**
- In the special case of the server being serially linked to the storage control system, a serial interface (RS-232) is required for each automatically connected storage system.

- Virtualization**
- The following basic requirements apply when using a virtual server:
- "VMware ESX" must be used as the virtualization software.
  - The customer is responsible for "VMware ESX" software support and administration.
  - The pre-installation of TruTops Fab software with Module Storage on the ESX server is carried out by TRUMPF via remote diagnostics. Additional assistance at the customer's premises could result in additional costs.
  - The virtual server must be accessible in the network via a fixed IP address.
  - Within the network, the virtual server must be integrated into the domain like a computer.
  - The virtual TruTops Fab server must be connected to the storage control system via a TCP/IP network connection.

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## 5.6 System requirements for connecting the bar code reader

The bar code reader can be connected via a serial interface (RS-232) or via a USB interface at the TruTops Fab Client. If you want to use a USB interface, a USB-COM driver must be available for the bar code reader.

The following devices have been tested successfully by TRUMPF:

- Bar code reader**
- Datalogic:
- Heron D130
  - Gryphon GD4100
  - Gryphon GD4400
  - PM 9500
- Honeywell:
- Voyager 9540
  - Hyperion 1300g

## 5.7 Special system requirements for TruTops Fab and TruTops Monitor in connection with TruTops Fab App

Only the differences of TruTops Fab and TruTops Monitor in connection with TruTops Fab App to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

### TruTops Fab and TruTops Monitor

- TruTops Fab Server
  - Module Quickjob.
  - Optional: Module Customer for customer view.

*or:*

TruTops Monitor Server

Optional: public (valid) SSL/TLS certificate for the access to the web service on the Microsoft IIS.

### Mobile devices

- Apple iPad, iPhone, iPod touch with iOS 8 or higher.
- WiFi-Scanner: Skorpio X3 (with Microsoft Windows Embedded Handheld 6.5 and WiFi), Skorpio X4 (with Windows CE and WiFi).

### Wireless network

- Connection to web server (Microsoft IIS in the customer network). A VPN-Connection is required for accessing the web server via internet.
- Min. 1MBit bit/s download/upload data transfer rate

### Others

- Network camera with motion JPEG (MJPEG) support (optional, the manufacturer AXIS is recommended).  
A VPN-Connection is required for accessing the camera via internet. Alternatively the camera must use the same IP-Address configuration for WLAN and internet.
- Machine control with RCI 1.4 or higher.

### Remote Control

To use the "Remote Control" (machine option „MobileControl App“) function of the machine, the following requirements must be fulfilled:

- The "MobileControl App" option must be enabled on the machine (not available on all machines).
- The machine must be accessible via "Teleservice via internet"



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(internet connection via customer network required).

- A VPN-Connection is required for accessing from outside the company network.



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## 5.8 Special system requirements for WebCalculate

Only the differences of WebCalculate to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- |                            |   |
|----------------------------|---|
| <b>TruTops Fab server</b>  | <ul style="list-style-type: none"><li>• Version 10.0 or higher.</li></ul>   |
| <b>Web server</b>          | <ul style="list-style-type: none"><li>• Microsoft IIS (will be installed automatically)</li><li>• Can be installed on the TruTops Fab server.</li></ul> |
| <b>Internet connection</b> | <ul style="list-style-type: none"><li>• Min. 512K bit/s download/upload data transfer rate</li></ul>  |
| <b>e-mail transmission</b> | <ul style="list-style-type: none"><li>• see 5.9: special system requirements TTFMessageService.</li></ul>   |

## 5.9 Special system requirements for TruTops Fab Client

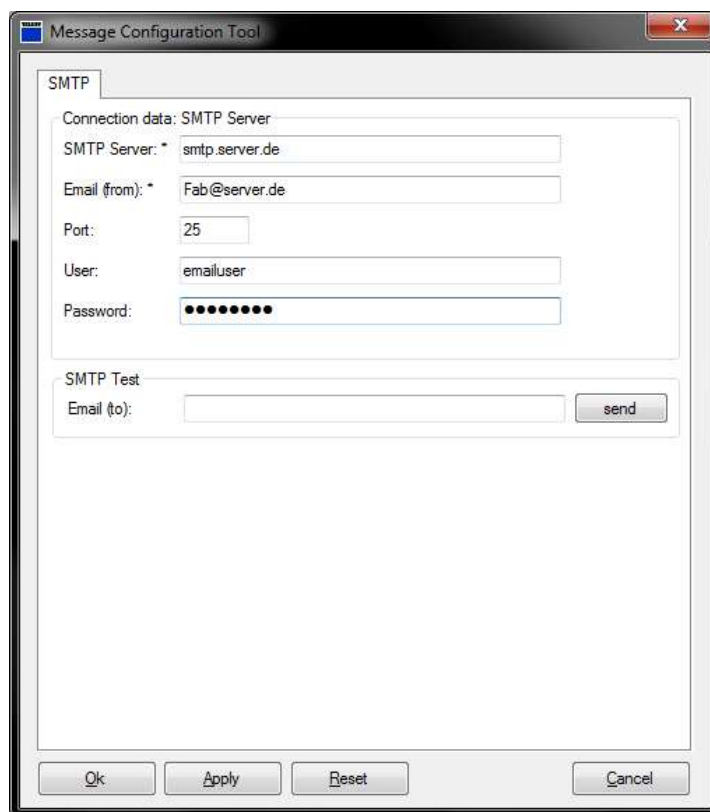
Only the differences of TruTops Fab Client to the requirements of other TruTops products are listed here. For the remaining points, the requirements of the TruTops products apply.

- |                    |   |
|--------------------|---|
| <b>Web Browser</b> | The TruTops Fab Client (Webclient) requires Google Chrome version 78.0 or higher. |
|--------------------|---|

## 5.10 Special system requirements for TTFMessageService

We will only list the differences between the TTFMessageService and the requirements of the other TruTops products. In all other cases, the requirements of the TruTops products apply.

The TTFMessageService sends e-mails via an SMTP server. After the TTFMessageService has been installed on a server, you will only need to maintain the SMTP connection data by means of the TTFMessageConfTool.



In addition, the required file share will be installed. You will only need to specify the path for the file share (TTFOutbox) on the Fab server. You can find the settings in CellPM.Nachrichtendienst.Postausgang.

If the SMTP server is not in the internal network (e.g. hosting by provider), the server on which the TTFMessageService is installed, must have access to the internet.

**TruTops Fab Server** Version 10.x or newer.



**Internet access** Min. 512 Kbit/s download/upload speed

**Network share** Will be created automatically.

### 5.11 Special system requirements TruTops Boost

		Required	Recommended
<b>Processor</b>	Client	2 GHz, Dual Core, supporting AVX instructions	3 GHz, Quad Core, supporting AVX instructions
	Server	Dual Core	Quad Core
<b>RAM</b>	Client	16 GB	32 GB
	Server	16 GB	32 GB
<b>Resolution</b>	Client	1280x1024 <sup>11</sup> , 32-bit color depth	1920x1080 <sup>11</sup> , 32-bit color depth
	Server	no special requirements	no special requirements
<b>Graphic card</b>	Client	512MB, DirectX 11, Shader 5.0, Open GL 4.5	1 GB, DirectX 11, Shader 5.0, Open GL 4.5 Nvidia discrete GPU
	Server	no special requirements	no special requirements
<b>Hard disk</b>	Client	15 GB free memory	25 GB free memory
	Server	20 GB free memory	25 GB free memory
<b>Mouse</b>	Client	Mouse with mouse wheel	Mouse with mouse wheel optional SpaceMouse
	Server	no special requirements	no special requirements

TruTops Boost hardware requirements

Table 10

### 5.12 Special system requirements TecZone Bend Standalone

	Required	Recommended
<b>Operating System</b>	Windows 10	Windows 10
<b>RAM</b>	4 GB	8 GB
<b>Resolution</b>	1024x768	1920x1080
<b>Graphic card</b>	Open GL 4.0 Support	Open GL 4.0 Support
<b>Mouse</b>	Mouse with mouse wheel	Mouse with mouse wheel optional SpaceMouse

<sup>11</sup> limited HiDPI support

## 5.13 Special system requirements TruTops Weld

	Required	Recommended
<b>Operating System (64-bit for all)</b>	Windows 10 version 1607, 1703, and up	
<b>Processor</b>	64-bit Intel or AMD, 2.4 GHz or faster	Intel Core-i7 or Xeon, 3.2 GHz or faster
<b>RAM</b>	8 GB	32 GB and over
<b>Hard Drive</b>	250 GB HDD, 20 GB free	250 GB SSD, 20 GB free
<b>Resolution</b>	1920x1080	
<b>Graphic card</b>	Open GL 3.2 Support, with 1 GB graphics memory. Note: No RADEON cards	NVIDIA Quadro graphics card with 2 GB dedicated graphics memory (or higher)

## 5.14 Special system requirements Programming Tube

	Erforderlich	Empfohlen
<b>Operating system (64-Bit for all)</b>	Windows 10 Version 1607, 1703 oder höher.	
<b>Server operating system</b>	Windows Server 2012 R2, Windows Server 2016, Windows Server 2019	
<b>RAM</b>	8 GB	32 GB
<b>Hard drive</b>	10 GB free	SSD, 20 GB free
<b>Resolution</b>	1920x1080	
<b>Graphic card</b>	1 GB, 3D-Modi hardware-supported, DirectX 11	2 GB, 3D-Modi hardware-supported, DirectX 11

## 5.15 Special system requirements for Online Postprocessor

The online post-processor is a component of TruTops Laser that is necessary to create NC programs for the new platform machines L76, L78, L81 and L88. For this purpose, all required data is transferred from TruTops Laser via the internet to a web service creating the NC program. An internet connection is therefore a prerequisite for creating NC programs for platform machines with TruTops Laser.

**System Requirements** Online Postprocessor requires TruTops Version 10.X or higher.

**Internet** There is a working connection to the internet required.



**Firewall Configuration** The online post-processor requires access to the internet. It communicates via HTTP (TCP port 80) and HTTPS (TCP port 443). The TruTops installation sets the corresponding Windows Firewall rule for the executable file „OnlinePostProcessor.exe“.

If an additional firewall is in use on the target system, it is possible that the system administrator has to set the required authorization rules.

The online post-processor is available via the following internet address:

<https://opp.api.trumpf.com>

The current status of the service can be checked on the following status page:

<https://status.opp.api.trumpf.com>

In addition, this status page contains a list of all maintenance operations and currently known problems.

## 5.16 Special system requirements for TruTops Cell (SW48)

**TruTops Cell (SW48)** The following Hardware requirements apply to TruTops Cell (SW48).

	Required	Recommended
<b>Processor</b>	Dual Core, Support AVX Command Set	Quad Core, Support AVX Command Set
<b>Memory</b>	8 GB	>=16 GB
<b>Resolution</b>	1280x1024, 32 bit color depth	1920x1080, 32 Bit Color Depth
<b>Graphics card</b>	512MB, DirectX 9c, Shader 3.0,Open GL 4.0	1 GB, DirectX 11, Shader 3.0,Open GL 4.0
<b>Hard drive</b>	8 GB of free space	over 15 GB of free space
<b>Mouse</b>	Mouse with 2 buttons and mouse wheel	Mouse with 2 buttons and mouse wheel optional SpaceMouse

## 6. Required Hard Drive Space

The required hard drive space depends on the product installed, the type of installation (client, server), the operating mode (PDM, file system) and the customer data accrued.

### Space required for installation

The values listed below show the minimum amount of memory required during installation.

	Server	Client
TruTops	15 GB	5 GB
TruTops Fab/Monitor	36 GB	1 GB
TruTops Cell	6,5 GB	9 GB
TruTops Cell (SW48)	-	8 GB
TruTops Unfold	-	3 GB
TruTops Calculate	15 GB	2 GB
Tube Design	-	3 GB
TruTops Boost	20 GB	15 GB
TecZone Bend Standalone	-	1 GB

Required hard drive space

Table 11

### Notes

- The memory capacity requirements for database backups<sup>12</sup> have already been taken into account.
- When installing client and server or several products on a computer, add the values together.
- "MS SQL Server" is always installed on the boot drive and requires approx. 1.5 GB memory. If a server is not installed on the boot drive, the 1.5 GB can be subtracted from the values given in the table. 1.5 GB must, however, be available on the boot drive.

### Space required for productive use

During productive use, in addition to installation files, space is required for user data (e.g. drawings, NC programs, sheet layouts) as well as for the PDM database which increases in size parallel to the user data.

The space requirements depend greatly on the type of saved files. For example, files from 3D models (TruTops Unfold or TruTops Cell) require considerably more space than simple GEO files.

<sup>12</sup> The requirements are based on empirical values. The space requirements for large archives may be greater.



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For a typical file storage it can be assumed that 100,000 files will require approx. 15 GB memory as a rough average, whereby large deviations above or below this value cannot be ruled out in individual cases.

TruTops Boost will require approximately 75 GB for 100000 3D parts.

## 7. Version Compatibility

### 7.1 TruTops Fab

**TruTops Monitor** TruTops Fab and TruTops Monitor **cannot** be installed together on one computer.

**TruTops products** The following table shows which TruTops Fab version can be used with which TruTops products and versions.

		22.0.0	21.0.0	20.0.0	19.0.0	18.0.0	17.0.0	16.0.0	15.0.0
TruTops Version	PDM Version								
11.0.0	17.0	x	x	x	x	x	x	x	x
10.0.0	16.0	x	x	x	x	x	x	x	x
9.0.0	15.0	x	x	x	x	x	x	x <sup>13</sup>	x
8.0.0	14.0	x	x	x	x	x	x	x	x
7.2.0	13.0	x	x	x	x	x	x	x	x
TruTops Calculate									
21.0.0		x	x	-	-	-	-	-	-
20.0.0		-	x	x	-	-	-	-	-
19.0.0		-	-	x	x	-	-	-	-
18.0.0		-	-	-	x	x	-	-	-
17.0.0		-	-	-	-	x	x	-	-
16.0.0		-	-	-	-	-	x	x	-
15.0.0		-	-	-	-	-	x	x	x
14.0.0		-	-	-	-	-	x	x	x
TruTops Boost									
13.0.0		x	-	-	-	-	-	-	-
12.0.0		-	x	-	-	-	-	-	-
11.0.0		-	-	x	-	-	-	-	-
10.0.0		-	-	-	x	-	-	-	-
9.0.0		-	-	-	-	x	-	-	-
8.0.0		-	-	-	-	-	x	-	-
7.0.0		-	-	-	-	-	-	x	-
6.0.0		-	-	-	-	-	-	-	x

TruTops Fab/TruTops compatibility

Table 12

<sup>13</sup> Support of TruTops Tube starting with TruTops Fab V16.0.0, TruTops V9.0.0



## 7.2 3D Tube Construction

As of version V11.0.0 3D tube construction does not need any prior installations. Previous versions needed TruTops to be completely installed.

The following version dependencies applied:

3D tube construction	TruTops version
1.0.0	1.2.0 / 1.2.1 / 1.2.2 / 1.2.3 / 1.2.10
1.1.0	1.2.11 / 2.0.0
1.1.1	2.0.1 / 2.0.2
1.2.0	2.1.0
1.2.1	2.1.1
1.3.0	2.2.0 - 2.9.0
2.0.0	3.x.0
3.0.1	4.0.0
4.0.0	4.7.0
5.0.0	5.0.0
6.0.0	6.11.0 / 7.0.0
7.0.0	6.11.0 / 7.0.0 / 8.0.0
8.0.0	7.0.0 / 8.0.0
9.0.0	8.0.0 / 9.0.0
10.0.0	8.0.0 / 9.0.0 / 10.0.0
10.0.1	8.0.0 / 9.0.0 / 10.0.0 / 11.0.0

Version dependencies for 3D tube construction

Table 13

## 7.3 Job Order Interface

Job Order Interface is compatible with the following TruTops versions.

TruTops version	Job Order Interface
7.10	9.3.0 / 16.0.0 / 17.0.0 / 18.0.0 / 19.0.0 / 20.0.0 / 21.0.0 / 22.0.0
9.1.0	16.0.0 / 17.0.0 / 18.0.0 / 19.0.0 / 20.0.0 / 21.0.0 / 22.0.0

For newer versions please see [7.1 TruTops Fab](#)

## 7.4 TecZone Bend Standalone

TruTops Boost and TecZone Bend Standalone can be operated in parallel.



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